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ABSTRACT

On March 22, 1993, the Tennessee Supreme Court found the method used by the state to fund local school districts to be unconstitutional. This finding culminated litigation filed by 77 mostly small, rural school districts known as the Tennessee Small School Systems (TSSS), claiming that the state's system of funding education was inequitable and violated the equal protection clause of the state constitution. The TSSS maintained that the inequity in funding was a determining factor in an apparent gap in achievement levels between the plaintiffs and those districts perceived to have adequate revenues. In 1992, the Tennessee legislature enacted legislation mandating a more equalized funding formula with a 5-year phase-in for full funding, and a new assessment system, the Tennessee Value Added Assessment System (TVAAS). A study compared TVAAS scores for grades 2-8 by year and grade level for the rural litigant and non-litigant districts during the 5-year phase-in period in the areas of mathematics, reading, language, science, and social studies. Findings indicate that the gap in standardized test scores between the two groups showed no real change as funding was equalized. (TD)

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Does Achieving Fiscal Equity by Rural Litigant School Districts Diminish Student Achievement Gaps with Non-litigant Districts?

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Abstract
The intent of this research was to examine the value added student achievement levels of those rural school districts, which were litigants in the Tennessee Small School Systems V. McWherter and compare them to those districts, which were not litigants. The district average value added achievement test scores derived from the Tennessee Comprehensive Assessment Program were analyzed for districts in both groups. During the proceedings the litigants from the rural districts gave testimony comparing adjacent school districts, of widely varying degrees of fiscal and material resources, including instructional materials and supplies and teacher salaries. The implication was drawn that higher expectations for achievement outcomes could possibly mandate an equalization of revenue availability for the rural districts. The enacted legislation mandated a new more equalized funding formula with a five-year phase in for full funding. It was this five-year phase in period that was evaluated

Background
On March 22,1993 the Tennessee Supreme Court filed an opinion finding the method used by the state to fund local school districts, the Tennessee Foundation Program (TFP), to be unconstitutional. This finding essentially culminated a litigation process filed against the state by 77 mostly small, rural school districts known as the Tennessee Small School Systems (TSSS). The TSSS had asked the court to declare the TFP unconstitutional, enjoin the defendants (state) from acting under the current TFP statutes and to require that a constitutional education finance system be enacted by the legislature.

In 1992 the Tennessee legislature passed the Education Improvement Act (EIA) which among other considerations established an education trust fund for the state. All funds for k-12 education were to be placed in this special revenue account entitled the Basic Education Program (BEP). The legislature indicated that the special fund establishment was to ensure legislative accountability to the public for the impending tax increase necessary to fund the EIA education reform. (TACIR, 1997)

Although the BEP has been classified as a minimum foundation program, in concept it is different from its predecessor the TFP. It was designed to provide programs and services essential to a "basic education" for Tennessee public school students in grades k-12. That objective was undertaken by defining the essentials of an effective plan suitable for every local school system.

The BEP formula determines the funding level required for each school system to provide a "basic" level of services for all students. The BEP requires state and local funding, but the amount of funds appropriated by a local district does not effect the level provided to that system by the BEP. The BEP funds are allocated between classroom and non-classroom components found by the State Board of Education to be needed by all local school districts. The total cost of the BEP for the state is the total cost of all local school districts. The actual individual component cost is determined annually using a formula that takes into account variations in the cost of service delivery.

The BEP component parts are costed primarily on the basis of average daily membership (ADM) in specified classifications of students. The allocation requires funds to be expended for classroom and

non-classroom categories. Classroom components provide the resources for personnel including teachers, counselors, assistants, aides and other professional staff. Classroom components also provide resources for textbooks, instructional materials and supplies as well as personnel benefits. The state is responsible for funding 75 percent of the classroom components statewide.

The non-classroom components provide resources for central office administrative and support personnel, maintenance and operations, transportation of students, and capital outlay. The state is responsible for funding 50 % of the non-classroom components statewide. For purposes of accountability, each local school district (LEA) is required to submit a preliminary accountability budget summary at the beginning of the school year and an end of the year final accountability budget summary. The accountability budget summary was intended to hold each LEA accountable for its share of the BEP improvement funding and to provide a method of tracking new fiscal resources being invested into the public education system.

TSSS Lawsuit: District Inequities

In the 1988 TSSS vs. McWherter et al., the coalition of mostly rural school districts filed a lawsuit in the Chancery Court for the State of Tennessee 20th Judicial District, Davidson County (Nashville). The Plaintiffs were an unincorporated association known as the Tennessee Small School Systems, et al. The defendants in the case were Tennessee Governor Ned McWherter et al. and Charles O. Fraizer, Director of Metropolitan Nashville Davidson County Public Schools et al., as defendants, intervenors and cross claimants. At dispute was the TSSS claim that the way in which state laws permitted the collection and disbursement of tax revenues to local school districts for the support of education was inequitable and therefore in violation of the equal protection clause of the state constitution.

During the deliberations, and prior to the civil action, it was commonly held among the plaintiffs that the inequity in ability to fund local education and resulting inadequacy of revenues and expenditures also was a determining factor for an apparent gap in achievement levels among those districts perceived to have "adequate revenues" and the plaintiffs. This author could only discover anecdotal evidence of this but none based on substantive summary data analysis.

The interrogatories during the pretrial discovery phase were used by the defendants to query the plaintiffs about inequities in educational services and the effect of these inequities. Question 2 in the interrogatory, which became Exhibit B for the trial asked; "as to each plaintiff school system, identify with particularity the educational services alleged to be substandard!" The response of the plaintiffs listed thirty-one areas they deemed to be substandard in the rural districts.

Question 3 of the interrogatory asked the plaintiffs to identify persons having knowledge of the substandard conditions. The plaintiffs answered by listing the superintendents of the plaintiff districts as well as the defendants. Question 10 asked "*with regard to each named plaintiff's students, state with particularity what detriment, if any, these substandard educational services have caused. The response of the plaintiffs was "with regard to students, plaintiffs, have not alleged that any particular detriment to any particular individual has been caused. Therefore, plaintiffs cannot state what detriment these substandard services have caused."*

Question 15 of the Interrogatories asked, "state with particularity what educational services are provided in non-plaintiff school systems in Tennessee that are unavailable or substandard in plaintiff school districts. The Plaintiffs response included twenty-four areas they considered either substandard or unavailable. Question 16 asked the plaintiffs, "as to each service named in response to Interrogatory 15, state which Tennessee counties or school systems provide each service which is not available or is substandard in plaintiff school systems. The plaintiffs responded, *"Even though there are disparate conditions among school districts and a drastic lack of uniformity between the more affluent and poorer school districts, no school district is free from need, and the overall lack of funding statewide inhibits all programs, affluent and poor alike."*

In the original complaint, the plaintiffs had asserted that not all students were receiving a *"minimally adequate education."* Question 17 of the interrogatives asked for a definition with particulars of a *"minimally adequate education"* To which the plaintiffs answered, *"minimally adequate education is defined in all laws, regulations and directives promulgated by the State of Tennessee through the State Board of Education which apply to and govern education in grades k-12. We believe that it is the obligation of the state to assure every student, regardless of their geographical location, a minimally adequate education which would provide the student with sufficient skills and knowledge to compete in modern society and for those who desire to do so and have the intellectual capacity to be eligible for admission to the college or university of their choice with adequate preparation to meet the educational standards required by that institution without remedial education."*

It is apparent from the questions and subsequent answers to the interrogatories; the plaintiffs were describing a system that in their estimation perpetuated the provision of unequal educational opportunities to students in predominately rural school districts. However, they did not attempt to ascribe any relationship between this condition and particular outcomes.

With the enactment of the Education Improvement Act of 1992 came the Basic Education Program method of allocating state funding in a more equalized manner to local school districts. The base amount of state funds was calculated on a cost based formula which included over forty education related expenditure categories at the school and district levels. The allocation itself is based on an "ability to pay" indices which measures the potential wealth of the district or county. The BEP funding is categorized and allocated in classroom and non-classroom components.

Tennessee Value Added System

The EIA also mandated the implementation of the Tennessee Value Added Assessment System (TVAAS). TVAAS is a statistical process based on Henderson's work with "Best Linear Unbiased Prediction", (BLUP 1975) and Stroup's Mixed Model Methodology. The TVAAS model utilizes outcomes (mean scale scores) of the Tennessee Comprehensive Assessment Program (TCAP). The TCAP was designed to generate both norm-referenced and criterion-referenced scores. The norm-referenced scores for the period of this investigation were based on the Comprehensive Test of Basic Skills 4 (CTBS-4) published by McGraw Hill. Pattern response scoring was utilized in the generation of the statewide student scores in grades 2-8. Scale scores generated by the TCAP were utilized in the TVAAS model to generate mean norm gain scores for teachers, schools and school districts at various grade levels.

Analysis

While there is no clear, absolute way to gauge student progress through school at least one generally successful way is to use the results of standardized tests. Such data can reflect the change (gain or loss) in pupil performance in selected subject areas over an extended period of time. The TVAAS provides a generally accepted way to examine how students perform over a period of several years with school location, school size, teacher competence, etc. controlled as a function of how well each student has done.

The data for the rural litigant and non-litigant districts were assembled and analyzed for differences. The mean TVAAS assessment scores for rural litigant and non-litigant were computed and analyzed for differences in the subject areas of reading, mathematics, language, science and social studies for the years 1994-1997. These years were chosen because TVAAS uses a longitudinal process, making 1994 the first valid year for these analyses and the CTBS/4 was discontinued in favor of the Terra Nova, which was first applied in 1998. In order to have a value added score; test data from the year prior to the first value added must be included in the data set. Thus while four years are noted, five years of results are used. For illustrative purposes, the analysis concentrated on literacy and numeracy utilizing reading and math scores from the two groups. Results of language, science and social studies showed similar results but will be omitted due to space concerns.

While there were rural districts in the non-litigant group, all litigant districts were rural. Research independent of this study indicated the rural litigant districts to have less access to wealth resources than non-litigant districts.

The courts had agreed to the defendants (state) plan of a five-year phase in of full funding for the BEP model. The data collected and analyzed was generated during this time. The TVAAS gain score data was supplied by the Tennessee State Department of Education for the 1994-1997 school years. The initial analysis computed and compared the TVAAS gain scores by year and grade level for the rural litigant and non-litigant groupings in the subject areas noted above. The results for each area are discussed separately.

Mathematics

Data from mathematics scores for litigants and non-litigants present a mixed set of results. For grade 3, non-litigant school districts had higher scores during the four-year period. Grade 4 data show a reversal of that trend when all results were higher for the litigant group. Grade 5 data again favored the non-litigant group, while grade 6 remits had the rural litigant schools with the best remits. The pattern followed for grades 7 and 8 with non-litigant scores better in grade 7 and rural litigant scores better in grade 8. In grades 4,5 and 6, the difference between the two groups was not as pronounced as in other years, while in grades 3 and 7, the results were sharply different.

Reading

Reading scores in the TVAAS showed a similar variable pattern of results across the four years and six grade levels. While several grades / years favored the rural litigant group, a similar set of results favored the non-litigant group in 1994-96. These differences were most notable in grade 3 in 1994 and grades 7 and 8 in 1996.

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The F statistic was used to determine whether any significant differences were found among the grade / subject comparisons between the rural litigant and non-litigant groups. Significance in reading was detected in grade 3 for the years 1994 and 1997, in grade 6 for 1996 and grade 8 for the years 1994 and 1995. There is however no detectable pattern for these results. The significance detected for math scores occurred in the 4th grade in 1995 and 1997, also for the 5th for 1994 and 1997, while it was detected in the 8th grade only for the 1996 school year.

Discussion

Although the rural litigant and non-litigant districts have achieved a greater degree of fiscal equity for their revenues and expenditures for education services, this has not been the case with the continued gap in student achievement gain scores as determined by the TVAAS methodology. The variance of the mean scores were of such magnitude to show that the rural litigant districts have not consistently grown or distanced themselves in any substantive way from the non-litigant group. There was apparently no real change in the relationship of the gain scores in reading and mathematics for the two groups as the funding for the classroom component of the BEP was equalized. While the author is the first to note that increases in resources does not always project achievements, it would be seen at least to suffice that if the litigation was based on sound educational concerns, that some positive change should have accrued with the change in resources.

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